

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

| | | |
|---|-----------|--|
| (51) International Patent Classification ⁶ : C07D 239/94, 405/12, A61K 31/505 | A1 | (11) International Publication Number: WO 99/09016 (43) International Publication Date: 25 February 1999 (25.02.99) |
| <p>(21) International Application Number: PCT/US98/15789</p> <p>(22) International Filing Date: 29 July 1998 (29.07.98)</p> <p>(30) Priority Data: 08/904,942 1 August 1997 (01.08.97) US</p> <p>(71) Applicant: AMERICAN CYANAMID COMPANY [US/US]; Five Giralda Farms, Madison, NJ 07940-0874 (US).</p> <p>(72) Inventors: WISSNER, Allan; 31 Wood Avenue, Ardsley, NY 10502 (US). TSOU, Hwei-Ru; 7 Beverly Place, New City, NY 10956 (US). JOHNSON, Bernard, Dean; 47 Park Road, Stony Point, NY 10980 (US). HAMANN, Philip, Ross; 9 Alice Street, Garnerville, NY 10923 (US). ZHANG, Nan; 23 Powder Horn Drive, Suffern, NY 10901 (US).</p> <p>(74) Agents: ALICE, Ronald, W.; American Home Products Corporation, Patent Law Dept. - 2B, One Campus Drive, Parsippany, NJ 07054 (US) et al.</p> | | <p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i></p> |

(54) Title: SUBSTITUTED QUINAZOLINE DERIVATIVES AND THEIR USE AS TYROSINE KINASE INHIBITORS**(57) Abstract**

This invention provides compounds of formula (1) wherein X is C3-7 cycloalkyl, pyridinyl, pyrimidinyl or phenyl ring optionally substituted as described in claim 1, R₁, R₃ and R₄ are chosen from the groups listed in claim 1. R₂ is chosen from various unsaturated acyl groups listed in claim 1, with certain compounds being disclaimed. Use as tyrosine kinase inhibitors for the treatment of cancer and certain kidney diseases such as polycystic kidney disease.

